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EDUCATIONAL NEWS AND EDITORIAL COMMENT

Stuttering

The Board of Superintendents of the city schools of New York has issued a circular addressed to parents of children who stutter. There is no question at all that the early years of training in the school are of very great importance in avoiding this difficulty. Stuttering is a very serious handicap to any child, and if proper attention is given early in the school course to the cultivation of correct, distinct articulation the danger is very much decreased, if not, indeed, entirely removed. One of the specialists in this country who has had more experience with stuttering than most teachers or physicians has asserted with emphasis that if every child who has a disposition to stutter could be trained properly in the primary years he could be relieved entirely of this defect. There are some cases where surgical operations are necessary, but in most cases the difficulty is a functional difficulty in breathing and in the proper control of the vocal organs. The circular issued by the Board of Superintendents is therefore a very timely encouragement to parents to give their children proper training.

Your child has formed incorrect habits of speech. He will not speak correctly until he has been carefully trained in correct speech and has formed the habit of correct natural speech.

The speech improvement class has been formed for the purpose of systematically training pupils in correct natural speech and is in charge of a teacher who has made a thorough study of the principles of speech. Your child should become a member of that class. You should visit the class occasionally and co-operate with the teacher, that you may continue the work of building

correct speech habits when the child is at home. This is very important, as he can have at best only a very small part of each day under instruction for speech, and he is constantly using his former bad habits, which are altogether too firmly fixed at present.

The physical, breathing, and vocal exercises are excellent material for home practice, but the application of these to his everyday speech is a very important factor in his training. Your co-operation with the teacher will more than repay you and the child by the results obtained.

Though progress seems to be slow, do not lose confidence in the teacher, or fail to encourage the child in his efforts. Do not try scolding, threatening, or ridicule as a means of cure. Never unduly excite him. Never indulge a child because of his stuttering. All stutterers are despondent at times, and hence the attitude toward the child should always be a cheerful one. Stutterers, almost without exception, talk too rapidly; therefore encourage slow, deliberate, and modulated speech. Singing tones can be used to advantage. The child should be led to acquire correct speaking by observing, listening to, and imitating slow, distinct, well-spoken conversations.

Try to get the child to breathe naturally. It is not necessary to say a full sentence in a single breath. Let the child feel free to pause for breath at the end of any phrase.

Pay particular attention to correct articulation of sounds. When any sound has been learned, see that the child uses the correct form in his daily speech.

Let the child frequently read aloud or tell an incident to one or more members of the family, or let him recite from memory. Call attention to any improvement, have patience, and do not attempt to correct all mistakes at once.

He should be carefully kept away from stutterers outside of school.

The physical condition of the child is of the highest importance. He needs nourishing diet, with no stimulants (tea or coffee), and plenty of exercise in the open air. The greatest help toward a cure is perfect health.

Pennsylvania Normal Schools

The normal-school situation in the state of Pennsylvania has been the subject of investigation and of much discussion of late. The following statement from the *Philadelphia Ledger* is therefore interesting as indicating the changes which are being worked out in these institutions:

A beginning has been made of standardizing the dozen or more normal schools of this state by the purchase of the West Chester Normal School for a consideration of $12,900.

It is not generally known that most of the training schools for teachers of Pennsylvania—those in this city and Pittsburgh being notable exceptions—have remained distinctively private academies whose courses of instruction and budget systems are only secondarily under the authority of the state. Private

ownership and personal gains too frequently take precedence of educational standards. Consequently, no two of the schools offer diplomas which have precisely the same face value throughout the commonwealth.

All this is to be changed by the wise provisions of the new school law which provides for the purchase of the schools from their stockholders. In this first instance of transfer the deal was consummated without any of the sharp bargaining which over-shrewd holders of stock might have felt inclined to resort to at the expense of the public-school treasury. All trustees and stockholders of the other normal schools are expected to show the same fidelity to the cause of public education and relinquish their ownership claims to the state at the earliest practical moment for a proper compensation.

There should be no delay in raising all these training schools for teachers to the level of the high plane established by the Normal School for Girls and the School of Pedagogy of this city. The face value of every normal-school certificate should be approximately the same and should always represent throughout this state and elsewhere sound scholarship and the most complete pedagogic equipment obtainable.

The *Elementary School Teacher* is very glad indeed to give publicity to the following notice and request:

A School Exhibit

During the late fall and early winter the City Club of Chicago will hold in its clubrooms an exhibit of public buildings and grounds for the purpose of stimulating municipalities to make improvements in police stations, streets and alleys, playgrounds, schools, etc. A large space will be devoted to school buildings and grounds and it is the desire of the subcommittee in charge of the school exhibit to secure helpful suggestions from all persons interested in the success of the public schools.

The general purpose is to show the functions of school buildings and grounds and the adequacy of the buildings and grounds for the performance of these functions. Particular attention will be paid to heating, lighting, ventilating, seating, and general care of buildings. All persons interested are asked to send suggestions to William J. Bogan, Chairman, Subcommittee of School Buildings and Grounds.

Compulsory Education in Tennessee

The last legislature of Tennessee passed a compulsory attendance law. There was much discussion during the meeting of the legislature as to the probable effect of that law in increasing the attendance of children on the public schools of the state. An answer to these questions comes with the opening of the schools this autumn. The following clipping from Columbia, Tenn., is typical of news items which are appearing in the public press in different parts of that state:

More and more the effects of the compulsory school law are becoming apparent in every section of the state, and these effects have not missed Maury County.

The principal and most noticeable effect, perhaps, is the shortage of the school books. The local depository for the school books recently made out its order for books, based on the estimate of the demands for the opening of the schools in the county, and this order was only partially filled, being some three hundred books or more short, in spellers and primers.

The explanation of this shortage from the state agent was that the compulsory school law had had the effect of increasing the estimated demand for the books that were short.

It will be noticed that the shortage is in the primary grades, just the ones that would be effected by the school law referred to. It will probably be August 20 to 25 before this shortage can be supplied.

Other sections of the state have been disappointed even worse than the local depository. While the books were short on the recent order, the schools in the county that have already opened are not suffering, and only the schools that are to open later may be subjected to some inconvenience for a short time for the books with which to supply the primary grades.

According to the state superintendent of public instruction the county schools all over Tennessee are raising the Macedonian cry for more teachers to meet the necessities of the increased daily attendance.

C. H. J.

International Congress on School Hygiene

The Buffalo meeting of the International Congress on School Hygiene, August 25–30, was a big event. Hundreds of delegates from all over the world crowded the hotel corridors and the various rooms in which the sessions were held. Some five hundred papers were presented during the week on a great variety of topics. The following outline taken from the exhibit that was part of the Congress gives an idea of the scope of health direction now undertaken in public schools:

Child Study: Eugenics; Lectures and Exhibits; Special Schools for Defectives; Trained Psychologist; Laboratory for Examinations.

Preventive Hygiene: Sex Hygiene; Care of Eyes, Ears, and Teeth; Food and Adequate Rest; Cleanliness.

Physical Training: Gymnasiums; Games and Dancing; Corrective Gymnastics under a Competent Director.

Wider Use of the School Plant: For Lectures and Exhibits; School Lunches; Summer Supply of Pure Milk; Child Welfare Work; Little Mothers' Clubs.

Medical Inspection: With Adequate Dispensary Service; Co-operation of

Family Physician, of Principal, Teachers, and Parents; Home Visitation; School Nurses; Contact with Juvenile Court.

Preventive Measures: Proper Buildings with Adequate Light, Heat, Ventilation; Correct Furniture; Teachers' Restrooms; Sanitary Toilets, Sterilized Towels, Drinking-Fountains; Open-Air Rooms; Well-printed Books; Curriculum That Is Correct from Health Standpoint; Matron for the High School.

Personal Hygiene: Bathing, Food, Air, Exercise, Rest, Clothing; Care of Eyes, Nose, Throat, Teeth. Infection and Immunity; Study Habits; Beauty; Efficiency.

It is impossible to report the proceedings in limited space. A few excerpts may be given:

"We have in this country 183,000 students in colleges and universities; 187,000 patients in hospitals for the insane. Do the results justify our methods of education?"—Potter.

"The acquisition of good habits and not of information is our educational aim."—Burnham.

"The schools should develop a rudimentary philosophy of life."—Burnham.

"Free eyeglasses are an economy, not a charity."—Wessels.

"With an epidemic of contagious disease existing," said Dr. McLaughlin, "there is a tendency in most communities to close the schools. In the Philippines, on the contrary, it is the policy of the Bureau of Health to keep the schools open because of their extraordinary value in teaching the precepts of disease prevention.

"They are used in cholera epidemics as demonstrating stations where the children were taught how to protect themselves and their parents against cholera. The same principle is used in combating tuberculosis, hookworm, dysentery, and beri-beri. The children are taught how these diseases are contracted and how they may be prevented."

Dr. Charles V. Chapin maintained that, generally speaking, the schoolroom is not a factor in the spread of many contagious diseases.

"Because scarlet fever and diphtheria are much less prevalent in summer and increase during the autumn," he said, "it is argued that the increase must be due to school attendance. It is, however, clearly shown by figures, derived from various cities, that there is no real correlation between these diseases and school attendance, but rather between them and seasonal temperature.

"Detailed study of cases also shows that very few cases of scarlet fever and diphtheria are contracted in school. It is otherwise with measles and whooping cough, the spread of which seems to be greatly facilitated by school attendance. That other contagious diseases are spread in schools, we have no evidence.

"The way to prevent infection in school is to teach personal cleanliness. Abolish the drinking-cup and the towel in common use. Keep careful watch

of contagious diseases and exclude them. The fumigation of schoolrooms is a concession to prejudices of the past."

Dr. Walter W. Roach told of an interesting experiment with two classes of third-grade pupils in Philadelphia. One class occupied a room heated and ventilated in the usual way. The second class studied all winter in a classroom with the windows wide open.

"The windows of the one room were kept constantly down from the top and up from the bottom, and the room was cut off from the regular heating plant of the building. The ordinary desks were removed, and replaced with chair desks which could easily be moved by the pupils themselves to clear the floor space for frequent physical exercises. As cold weather approached, the children were provided with woolen sweaters, worsted caps, soft woolen blankets, and knitted woolen gloves. Thus their lower extremities were protected from the cold floor with no disturbance of the circulation.

"Week by week during the fall and winter and spring we weighed and examined these pupils, watched their study and their play, and compared their scholarship with that of the children in the warm-air room. The children from both rooms came from the same kind of homes, so that the test was as fair and as accurate and searching as possible. As might have been expected, we found at the end that the pupils in the open-window room had gained on an average more than twice as much in weight as those in the warm-air room. They kept wholly free from colds, and were much more regular in attendance than the others."

E. R. D.

School Hygiene

The International Congress on Hygiene, which convened at Buffalo and which is reported in another section, has aroused very widespread discussion throughout the country on the problems of hygiene in the school.

Open-Air Schools

A number of cities and institutions are experimenting with open-air schools as a means of improving the health of pupils. The project which is being organized at Bryn Mawr has received wide currency. This plan, in brief, consists in giving a complete outdoor education for seven years to a number of girls. They enter the school at ten and continue until they finish their college career. This thoroughgoing experiment will be watched with interest. A number of school systems are introducing open-air schools for children who suffer from tuberculosis, undernourishment, or some other physical disability. The *Harrisburg, Pa., Independent* has the following note in regard to a school to be opened in that city:

If the plans of the medical inspector of the Harrisburg school district are carried out, a second open-air school for the education of tubercular pupils will be established in Harrisburg this fall. Money for such a school was appropriated in the annual budget this spring and active steps are now being made to establish the school.

An open-air school is also to be started in Portland, Ore.

A Supervisor of Hygienics

Another symptom of the increased interest in the hygiene of school children is the appointment of a new officer in the city of Houston, Tex., as reported in the *Houston Post:*

Supervisor of hygienics is the newest office in the Houston city school system. It was created at a meeting of the School Board Monday night, when it was decided that a regular physician should be employed for that position to be placed on the pay-rolls at a salary of about $300 per month and to have entire supervision of all matters pertaining to health, sanitation, and hygiene in the various schools.

The spread of psychological clinics in connection with public-school systems or under other auspices is a further evidence of the attention which is given to the mental abnormalities of children. According to a note sent out by the Bureau of Education there are now forty psychological clinics in the United States. The first clinic for the examination of deficient children was founded by Dr. Witmer at the University of Pennsylvania in 1896.

A Trial of Slanting Desks

An attempt to improve the physical conditions of the school-room in such a way as to prevent physical abnormalities is reported from Chicago. According to the *Chicago Tribune* the superintendent of schools is about to instal in several rooms desks with a top having a slant of 35 degrees. Educational theorists have for a long time condemned the flat-top desk for children. The slanting top favors a more erect posture in reading, writing, drawing, etc., but the practical difficulties have thus far prevented the adoption of a desk with much slant. The results of this experiment will therefore be of much interest.

Another modification of the physical equipment of the school-room is reported by the *Detroit News:*

The new Sampson School at Ironwood and Begole Streets, in the Sixteenth Ward, has been equipped with movable chairs and tables similar to those in

use in the ordinary business office. The pupils who flock to the new school this morning will be the first public-school children who have not been forced to absorb the rudiments of education at the nailed-to-the-floor desk and bench. The experiment of substituting movable chairs and tables will be watched with interest outside of Detroit, for it is new to the country, generally, as well as to this city.

The Problem of Congestion

The opening of the school year with the increase in pupils over the past year has caused attention to be particularly directed toward the insufficient accommodations of the school buildings. Various means are being adopted to meet the problem which arises from the congestion of the schools. The *Globe and Commercial Advertiser* of New York reports a method of taking care of two sets of children in the same school without unduly reducing the length of the school day for the pupils. The plan is the so-called Ettinger plan with some modifications.

Unless present plans are changed when the Board of Education meets this afternoon, and that does not now appear likely, the last act necessary to carry into effect the plan for reducing part time approved unanimously by the board two weeks ago will be taken. It is to amend the by-laws to reduce the school day for all young children from five to four hours, and to authorize double sessions of five hours each in the upper grades. The Brooklyn Teachers' Association has asked for a hearing, but it is too late. The Public Education Association has followed its usual policy of seeking delay. The members of the Board of Education are convinced that a careful study has been made of the problem by the superintendents, that prompt action is necessary, and that after the plan has been tried out any changes found to be necessary can be made. There isn't any evidence at present that any will be.

Everything is in readiness to put the plan into operation without delay. In anticipation of favorable action by the board today, City Superintendent Maxwell, by direction of the board of superintendents, ordered district superintendents and principals that to put the proposed plan into operation it is necessary to act promptly. "There should be no delay," he says in his circular to them, "in making preparations to put into operation the recommendations."

It is significant to note that teachers and principals in general have not regarded this plan with great favor for reasons which are obvious. It appears, however, to be a better expedient than to reduce the school day in length.

Another method of relieving congestion consists in expanding

the available school space by means of providing portable buildings. This plan has been in operation in Chicago for some time and is to be extended this year by the addition of a hundred portable buildings containing 188 rooms. A similar plan is being put into operation in Cleveland, Toledo, and Columbus, Ohio, Racine, Wis., South Bend, Ind., and Long Beach, Cal., among other places. The time will doubtless come when school boards will have sufficient foresight to provide for the increasing needs of the school population, but until such time comes school administrators will find it necessary to adopt such temporary expedients.

Cost of Living and Teachers' Salaries

A report which is made by a committee of the National Education Association and published by the Bureau of Education has called attention to the relation between the increase in cost of living and the salaries received by teachers. Part of the report is thus summarized by the *Northwest Journal of Education:*

Dr. Robert C. Brooks, executive secretary for the National Education Association committee, which prepared the report, shows by Bureau of Labor figures that wholesale prices in 1911 were 44.1 per cent higher than in 1907; that retail prices had increased 50.2 per cent in the same period; while in June, 1912, retail food prices were 61.7 per cent higher than in 1896. With these figures as a basis he analyzes teachers' salaries in five cities in different parts of the United States and demonstrates the plight of the teachers in the problem of increased cost of living.

The natural consequence of the diminishing returns from the salaries is the agitation of many teachers' associations for increased salary. Another symptom of the same attitude of mind is the effort which is being made toward pensions for retired teachers. A circular from the chairman of the Committee to Advance Insurance Legislation for Teachers of Illinois has for its purpose the awakening of interest in a bill which is to be introduced into the Illinois legislature. This is known as the Illinois Teachers' Insurance and Retirement Fund Bill and was framed by a committee of Freeport teachers. The provisions of the bill are briefly summarized in the circular as follows:

1. Its name, Insurance. It is a better investment than ordinary life insurance, as the benefit is *annual, for life,* instead of a single endowment.

2. It requires twenty-five years of service, fifteen in Illinois. No age limit is stated.

3. It provides for illness and other loss of time (Secs. 548, 549, 551, 554, 555).

4. If a teacher leaves the profession, it allows her to withdraw three-fourths of all money paid in.

5. If a teacher dies before completing twenty-five years of service, her estate receives three-fourths of all money paid in.

6. It provides that the fund shall be in the custody of the state treasurer and subject to the same requirements.

7. It requires the state to make an annual appropriation to the fund.

Salaries and Qualifications

That there is another side to the question of teachers' salaries is indicated by the action of the Board of Education of Philadelphia in limiting the attendance of students at the normal school. The *Philadelphia Inquirer* reports the action in the following words:

> Drastic regulations to limit the attendance of students at the Normal School and thus reduce the number of applicants for positions as teachers in the local system, it was stated yesterday, would result from the present controversy as to whether graduates of the classes of 1912 or 1913 should be given preference in appointments by the Board of Education.
>
> The school body has been divided for several months over the problem of supplying places for all available teachers and, it was declared by officials yesterday, it will endeavor to avoid these differences in the future by keeping the supply in proportion to the demand.

If this action in limiting the number who enter the normal school is accompanied by raising the standard of entrance, it deals with the fundamental principle affecting salaries. It is obvious that salaries are dependent, not merely upon the efforts of the interested individuals to obtain compensation adequate to meet their needs, but also upon the relation between supply and demand and upon the professional equipment of those who offer themselves for service. The legislature of Wisconsin recognizes this fact in the recent law in which a minimum salary of $400 for teachers was fixed. In the same law in which a minimum salary was fixed, a minimum requirement of education and equipment was also included.

F. N. F.

THE RELATION BETWEEN AND THE CONTROL OF MANUAL ARTS AND VOCATIONAL EDUCATION[1]

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The purpose of this paper is to show how the present public-school facilities may be reorganized to meet the demands, not only of public-school manual arts, but of vocational education as well.

The public from time to time hears of some wonderful discovery, for example in the field of medicine. Immediately a new class of doctors appears, and the claim set forth by them is this: We have found a new way to treat people for an old disease. We are the only physicians who can effect a cure.

In our educational progress at the present time the new doctor is the man who is advocating vocational education as the only means of keeping boys in school. He is the physician of *general* practice, however. But there is the specialist. He does not treat the boy who has any one or all of many aches and pains and who would relieve himself by quitting school. He is the man who prescribes for the boy who has just one particular kind of a pain, viz., a heartache to do real industrial work. This boy has taken medicine that we call manual training, but because it has not been given in large, allopathic, bitter-pill doses he has not entirely recovered from his trouble. His pain is simply reduced by this treatment; or perhaps, as in the case of many a misapplied potion, it has been aggravated thereby. The only way to cure him, says the industrial educationalist, is to give him an old-fashioned dose of sulphur and molasses without any peppermint in it. Hard work and long hours with eyes always fixed upon the one goal—a wage-earning job—is the ultimatum.

Now I take it that very few people believe there is *only one way* to cure a boy from wishing to leave school, any more than we

[1] Address before the Northeastern Minnesota Teachers' Association, December, 1912.

believe there is only one way to cure one from some physical ailment. Neither do I think that many of us believe it necessary always to prescribe *an entirely new method* in education any more than I believe we think it is always necessary to prescribe an entirely new and perhaps drastic means of curing some ailment of the body.

What I do believe is this: Most of us feel certain that in old methods which have had some degree of success in producing desired results there must be something worth while, even though the conditions under which the means have been used have changed; also, that in many well-thought-out new methods there must be much that deserves consideration. Consequently with reference to our present educational problem, "How shall we provide for vocational education?" I assume that, with me, you may believe two things, viz., (1) that in the old method of securing motor activity of an industrial type, that is, manual training, there must be something good, even at the present time when industrial education is the advocated cure-all for most educational ills, and (2) that in industrial education there is subject-matter, and method too, perhaps, which should be regarded as the best we know at the present time and therefore should be used.

These assumptions are made partly because school teachers are known to be of conservative mind—a mind, which, however, is not ultra-conservative, for it is not only willing but eager to respond to all that is new, if the new has in it the promise of reliability.

The statement printed upon the front page of an educational program which I saw recently suggests the attitude of teachers toward transition in educational matters. The statement follows: "Our system of education must be continually modified to meet new conditions, if it is to train boys and girls to meet the emergencies and seize the opportunities of modern life. The ideal system is the one which best meets the vital problems of the present and the future!" If we are all in accord with the underlying thought in this quotation, particularly in two essentials, viz., (1) that the present system must be "continually modified" and (2) "that the ideal system must meet *both present and near-future problems*," we shall be sympathetic in this discussion.

Before entering upon the main part of my theme, may I give briefly, and in a non-technical way, a few definitions:

1. *Manual arts* means what we usually think of as the subject-matter of public-school drawing and shop work.

2. *Manual training* is the method or process involved in teaching the manual arts.

3. *Vocational education* is that form of education the purpose of which is to prepare for particular productive service.

4. *Industrial education* is that part of vocational education which prepares for industrial service.

It will be seen upon reflection that the real difference between the manual arts and vocational education, if the above definitions are correct, is about, if not quite, the same as the difference between multiplying 2×4 for the sake of mental discipline and multiplying 2×4 to find out what four two-cent postage stamps cost. In the first case we have an example of generalization; in the second case we have an example of specialization. You reach the conclusion—a correct one I believe—that manual arts is a form of *general education* while vocational education is a form of *special education*, or education for a particular end.

It is because the manual arts in our public schools have not been properly differentiated and specialized that they have not been vocational. If we wish to make them vocational then we shall differentiate them and make them special in character.

Can we do this and if so shall we in our existing public schools?

My answer is that *we can* and that *we should*.

The agitation for vocational education has been vital to our American people for five years past. It is vital for three reasons:

1. It is vital because it is the result of an economic demand. We are told by the manufacturers through the National Association of Manufacturers that America is running far behind its competitors in the Old World in the race for industrial supremacy. We no longer have skilled labor in America they tell us. We are further told by this association that through industrial training as a form of vocational education we may hope to secure a sufficient number of skilled mechanics to meet the demand. In the process, also, at least one-half of the school population beyond the age of fourteen

will be saved from a precarious livelihood—the result of an unskilled and consequently, truly speaking, unproductive labor—a form of labor in which boys and girls engage as soon as the state permits them to leave school and go to work.

2. It is vital because it is the result of a social demand. No less a personage than Miss Jane Addams of Hull House, Chicago, has quite conclusively proven this. All associations for civic and social betterment are agreed that the man or woman who possesses skill in some form of industry is a happier, a more helpful social being and a better citizen thereby. Formerly, the distinction between the "cultural" and "bread-and-butter" aims in education was drawn sharply. It was considered unsocial and even sordid to pursue knowledge with the hope of improving one's career in a financial way. Today this idea is changed. Instead of being sordid or basely utilitarian, Professor Frank Leavitt of the University of Chicago says about vocational education, or the education for utilitarian ends, that it "represents one of the finest ideals which the human mind has conceived, and sets forth a philosophy of life which can be fully realized under no other conditions than complete solidarity."

3. It is vital because it is the result of an educational demand. It may be that the educational workers of the country are always a little behind the economic and social workers in seeing the real need of the masses and adjusting their machinery to meet the need. However, the adjustment is always made. It has been made in the past to line up with political changes and it will be made now to accord with industrial changes. The National Education Association and every state and local educational association is keyed up to the point which demands adjustment in educational means and methods to solve the great educational problem of the hour.

Now both the manufacturers and the labor unions have tried to solve the problem of vocational education in the form of industrial education by each organizing schools to make better industrial workers and likewise better citizens. The result has been conflict growing out of misunderstanding and perhaps prejudice and jealousy. The manufacturer has accused the labor union, as the labor union has accused the manufacturer, of exploiting youth in

the specially endowed school for the special interest represented by the organization which established the school.

So, does it not become a public-school problem? It would seem so to me, and I think it must seem so to all of us who are charged with the problem of educating the American youth, without reference to the special interests of any particular individual or set of individuals save the boys and girls themselves. Their interests we must certainly regard and conserve. Have we done so in the past? Yes, to the best of our ability. But have we constantly kept in mind the fact that with each new year our younger companions in school are surrounded by a changed social and economic atmosphere? Perhaps so, but it has not always been evident from the adjustments we have made from year to year. On the dynamic side of our education we have fortified ourselves with what we have called the vocational studies: the commercial branches, agriculture, domestic science, and the manual arts, and then with the conviction of the man who trusts in the Almighty for his daily sustenance without himself making an effort to provide for the needs of the day, we have failed to exert ourselves further. The result has been stagnation. It has come through so-called vocational work, but in the guise of manual training for "cultural" ends alone. Gradually these vocational subjects have become more and more formal until by main force, as it were, interests outside of the school system have aroused us from our apathy.

Again we are given the opportunity truly to vitalize and motivate our vocational work and make it *real*.

I would not in this apparent arraignment of our past methods even suggest that what we have called manual training, for example, has not been worth while. It has; but as a general educational means, not as a vocational means. What we are now called upon to do, if we will, is to make it both educational and vocational. And I truly believe that if we do not accept this opportunity—one which the educators of twenty-five or thirty years ago had but failed to accept—we shall not be given a similar opportunity again. If we but read the signs we cannot but see that some way, somehow, the estimated 85 per cent who will not accept our methods of the

past are to be given methods adapted to their environment—one which is largely industrial, we are told. The fathers and mothers of these boys and girls are engaged in an economic struggle in which industrial activity plays an important part.

Now, "necessity is the mother of invention." We have been confronted with the necessity for vocational education; we have invented a means of giving it. And what is the invention? State laws for vocational education in twenty-nine of the states of the Union with several others seeking the enactment of vocational education bills into laws during the legislative sessions of the present year. And what is the result of the inventions—these laws? Vocational schools of *two kinds:* (1) those placed under the administrative control of existing boards of education; (2) those placed under the administrative control of new boards, usually called industrial education boards.

In general it may be said that the first of these two schools seeks to utilize present resources and facilities by extending and expanding them so that there shall be a reformation rather than a revolution. The second of these two schools for the most part fails to recognize anything good in the schools as they exist and works upon the theory that nothing good can come out of Nazareth; therefore we must create anew.

In the particular field of educational work in which I am especially interested the first school says to its manual-arts director: "Here is a new problem. I believe you can solve it. We will give you the benefit of the judgment of our representative manufacturers and industrial workmen. You may employ expert commercial workmen, purchase new machinery, and have more time in which to do your work. Your problem is one of *adjustment.* In making the adjustment, maintain *not* the traditions of the past, but the vitalizing educational *purpose* of the work of the past which has been found lacking in subject-matter only."

The second school will have nothing to do with the manual-arts teacher of the past. In the spirit of revolution, rather than evolution, it sets up an entirely new organization. It employs a man from the shops who may be and probably is an excellent workman, but who may not be and usually is not a teacher. It pur-

chases an entirely new equipment, puts it into a new building, and says to the prospective instructor: "Here is a class of boys who have tired and sickened of the public school and its *play*. Put them to work. Train them (mind you, train them, not educate), train them to be skilled workers in your occupation."

My illustration is an extreme one, but by it I wish more clearly and surely to make my point, viz., each school is attempting to solve a *single* problem: the most effective education of the boys (or girls in the case of girls' vocational schools) who need vocational work to satisfy their craving for instruction which will do two things: (1) prepare them directly for productive employment, and (2) prepare them for better living.

Now, as is the case with almost everything that exists, there is good in both of these schools and in their methods. The question we have to answer is this: Which one has the greatest possibility in it for the boys and girls themselves? Each one of us must answer this question for himself, but we may be helped in reaching a conclusion if we will consider a somewhat similar question, but one which takes us out of the schoolroom and away from its atmosphere.

Would you or would I, if we had a large sum of money to invest in some new enterprise, put it into the hands of a number of trained men who had the reputation of being honest, earnest, and capable in the conduct of general business, and who would join with them experts in the particular new business to be undertaken, that they might counsel with these new members and perhaps allow their judgment to carry in the case of special or new points which were carefully considered by all? Or would we put our money into the hands of a special committee whom we also knew to be honest and earnest, but whose business ability had been tested in the handling of their own special affairs and in a way which had little or no relation to the general affairs under community control in which the first group of men were well versed?

Again, perhaps, my illustration is not well chosen, but you see the point of it I am sure.

Are we going to intrust vocational education to a fair-minded board of education with a special committee made up of men experienced in both the management and actual operation of the

vocations concerned, or are we going to have this special committee or board, disconnected with the existing school organization, act alone? It is the much-mooted question—a debatable one—whether vocational education shall be administered by a unit or a dual system of control.

For the manual arts, it means this: Shall we continue to utilize our present facilities both in physicial equipment and individual instructors for an extended and expanded manual arts which shall either become vocational in character, or include vocational education, or are we going to encourage and finally allow, without effort on our part, manual arts for vocational ends to be controlled by administrators who have little or no immediate knowledge of the educational significance of this important connecting link between book work and the work of productive labor? And shall we allow this work to be taught by men who come from the shops without their having some training for the great work of teaching?

The question is already being answered and answered by the very natural means of practical experiments. In Wisconsin we are experimenting—I think I can say no more than this—with the *dual system* of control and the shop man as teacher. In New York, New Jersey, Ohio, and other states the unit system of control is in vogue, and in these states, as in Wisconsin to a degree, both manual-arts teachers and shop men are acting as teachers. From what observation I am able to make—and I come in contact with a good many schools and teachers of industrial work every year—the idea of unit control is in the ascendency. I cannot speak as positively with reference to the teacher. As Dr. David Snedden, commissioner of education for Massachusetts says: "We are obtaining teachers much as the early settlers obtained their food—we are trusting to an accidental and variable supply produced by no effort of our own."

And yet it is perfectly evident now as it proved to be when manual training was first introduced in our schools that the man of actual shop experience, who has been trained to teach, is meeting with much more success than is the shop man who may perform his daily work at the bench or machine with great success,

and who may be able to train an individual apprentice but who cannot secure a systematic development in the same work with a *class of boys*. It is the old problem of turning the trick by having the power of organization and the ability to impart knowledge.

I would not be understood to say that the shop man cannot teach. My experience during the past two years in a continuation school for mechanics in which they are being trained for industrial teaching makes me feel certain that intelligent shop men properly trained may make some of our best teachers. I most thoroughly believe, however, that the wide-awake manual-arts teacher who has had some good commercial shop experience has much the advantage over the shop man unless the latter will spend a larger time in academic and professional teaching preparation than the manual-arts teacher will need to spend in a commercial shop. I cannot agree with Mr. C. A. Prosser, secretary of the National Society for the Promotion of Industrial Education, that a man must spend not less than five years in the commercial shop to be prepared to teach industrial work.

Nor would I be understood to say that the manual-arts department to retain its educational significance, nor the industrial school to maintain an educational atmosphere, must not have in it a shop man. To my mind unless the manual-arts teacher is a man of considerable commercial shop experience he must have associated with him in his work, not only advisers from the shops, but men from the commercial shops who will teach with him.

What is needed on the side of administration is a combination of manufacturers or employers of labor, employees, and school men in the administrative body which now exists, viz., the public-school board, and what is needed in the teaching is a combination of the school teacher and the shop workman. Get him in one person, if possible, either from the ranks of manual-arts teachers or from the commercial shop. What is needed is a man of commercial shop experience with teaching ability coupled with good character, virility, and the proper sympathy with the work he is doing for boys. He must have a burning desire to make them both good workmen and good citizens.

Furthermore, it must always be true that every boy, whether

he differentiates, and to a degree specializes, in his school work, either in a regular or a special public school, must have the opportunity *to advance as far as his abilities will permit him.* If he is a permit boy in a continuation school he should first be trained both in vocational and non-vocational work to be a *better workman.* If he is a boy in a regular public school he should likewise be trained, at the time when his desire for active community life makes it necessary, to work hard and long at the thing in which he wishes to become proficient, but this thing should be of the applied and concrete type, not the formal and abstract. Herein lies the chief suggestion for our public-school manual arts.

It is all a part of the great problem of universal education, and as Dean Eugene Davenport of the University of Illinois has said: "The best results will always follow when as many subjects as possible and as many vocations as may be are taught together in the same school, under the same management, and to the same body of men."

Differentiation and a certain amount of specialization is needed as early as the sixth grade. It should be preceded by a type of work, both vocational and non-vocational, and this prevocational work should be furnished in applied, concrete problems, if possible, that will show the connection between school and the work-a-day world. *But the exploitation of youth must always be a moral and therefore an educational impossibility.*

ADDRESSES BY CITIZENS TO SCHOOL BOYS

Various citizens of Winnipeg have made addresses before the public-school boys. These addresses have been printed in pamphlet form by the Winnipeg Industrial Bureau. That Bureau gave permission to the *Elementary School Teacher* to print several of the addresses as examples of what can be done in the way of bringing industrial information into the schools. There is no community where similar addresses are not possible.

APPRENTICESHIP

E. E. E. BAILEY
Supervisor of Apprentices, Canadian Pacific Railway Shops, Winnipeg

This afternoon I have been asked to talk to you, boys, on the way to become an apprentice. Several papers were read to you last season on the choice of a trade and how to commence and follow it, and I want now to go a little farther and tell you of the steps necessary to be taken, once you have decided on the trade to follow, should you wish to be apprenticed with us at Weston.

But first I want to point out, as so many gentlemen did in their addresses in the early part of the year, how very necessary it is that you should not suddenly drop, at the age of twelve or fourteen, all schooling. You will see why in a moment.

We have thirteen distinct and separate trades for you to choose from, namely, machinist, electrical machinist, boiler-maker, blacksmith, molder, pipe-fitter, airbrake-fitter, brass-finisher, pattern-maker, tinsmith, painter, tool-maker, and coach-carpenter, so you see there is plenty of choice.

But we expect a boy, once he has selected the trade he thinks he would like to follow, and has been duly apprenticed to it, to stick to it and not to switch round and tell us he does not like what he has chosen and that he wants to change to something else.

However, telling you that now, is rather like putting the cart before the horse, and you will want to know what to do first.

First, then, when you apply at the shops, you will have to pass an entrance examination in simple arithmetic, such as sums in fractions and decimals, freehand drawing, and English composition, because we are going to teach you more than that before we turn you out a tradesman, and we have not time to instruct you in all primary subjects.

Now, it is just here where so many applicants fail (and if you don't pass the examination you don't get made an apprentice), and that is why I said, at the beginning, it was so necessary to keep up, at any rate in some degree, the schooling that many boys leave behind them for a couple of years. Many boys come along thinking it easy enough to remember what they learned three or four years back, and are surprised when they get stuck with what used to be simple sums. That is where the advantage of keeping up your schooling comes in, for it is only by constant practice that you can keep your mind trained to acquire and retain knowledge.

It does not follow, in fact it very rarely happens, that there is an immediate vacancy for an apprentice in any of the trades, even if he is successful in passing the entrance examination. We have so many boys anxious to serve their time with the company that a waiting list is kept for each trade, and boys enter in rotation as vacancies occur. So it is better for a boy to present himself some months before he is sixteen (which is the minimum age at which apprenticeships are started), in order that he will be able to complete the obligatory five years at the time, or soon after, he is twenty-one.

Next, supposing the vacancy occurs. The senior boy on the list is written to, generally about a fortnight beforehand (so that, if he is in a job he can give convenient notice), and instructed to obtain a medical certificate of suitability from the company's doctor—and, I may say, that no boy is accepted who is a cigarette smoker. Armed with this, and accompanied by his parent or guardian, he comes up to the shops, and, provided the certificate is satisfactory, he is duly indentured or apprenticed. These indentures are simple documents, consisting practically of two

clauses, one that he shall serve an apprenticeship of five years, and the other that he shall not become a member of a trades union until he is out of his time, when he can please himself.

All these preliminary things being settled, the boy is now fairly launched into the way of learning his trade. The training in every department is very careful and thorough and, beyond his shop work, each boy in his first year takes up for two hours a week, in the company's time, his arithmetic where he left off at school, and one or two other elementary subjects, such as freehand drawing. The next two years he is given more extended technical instruction for four hours per week, and each year the company donates scholarships to the five boys gaining the highest marks in the annual examinations on the year's work. These scholarships consist of some technical course chosen by the successful boy as most useful in increasing his theoretical knowledge of the trade he is learning, and a special class is held each week for them.

Now, there are only one or two things the company expects from an apprentice in return for the care, time, and trouble that is expended on him. First, he must be punctual, and, second, he must apply himself to his work and seek to learn all he can. Idleness is not allowed, nor is inattention or incivility. As regards punctuality, he is allowed two "lates" in a month, with a maximum of twelve a year, and he may have one hundred hours off per annum without affecting his annual increase. Anything over this number he has to make up before he can obtain an increase in pay.

The rates of wages during apprenticeship are the same for all trades and run as follows: first year, 13 cents per hour; second year, 17 cents; third year, 20 cents; fourth year, 23 cents, and the fifth year, 26 cents per hour. Free holiday transportation is granted on an ascending scale, starting with a short distance the first year and finishing in the fifth over all the Canadian Pacific Railway system, foreign continental lines and a three-quarter rate on Canadian Pacific Railway boats to and from England.

On completion of a satisfactory apprenticeship the apprentice receives a certificate and passes at once on to the current rate of pay for the trade he has learnt.

The company takes a great interest in the present system of

training, which has now been in existence for over three years, and very careful records are kept of each boy's progress and adaptability, because we expect that as a result of our training the majority of our apprentices will, before long, be very excellent material from which to select officers, and it therefore rests entirely with each boy as to what he will make of himself. You will all readily understand that with the enormous and constantly increasing mileage of the Canadian Pacific Railways, the demand for well-trained and ambitious young men is large, and our vice-president, Mr. George Bury, told the public high-school boys in his paper some time ago: "I am continually looking around for officers," and (here the schooling question crops up again), "those on the list for promotion who have not improved on their earlier defects in education have to go by the board" or, in other words, they lose the chance of getting on they otherwise would have had.

So you see I finish up where I started—to impress all you boys not to be in too great a hurry to quit school the first opportunity you get. If you have to start work early, then go to a night-school, and keep on going. You will find there is always something more to learn, whatever you may be studying or working at.

SALESMANSHIP

A. L. STRUTHERS
Representative of the Business Science Club of Winnipeg

I am glad to look into your faces this afternoon, boys. You are to be congratulated on working in harmony with a school system which is sufficiently progressive to prepare you here and now for the work which many of you will do for the rest of your lives. A number of you will become salesmen and you are wise to lay hold of anything that will enable you to become scientific salesmen.

We are living in a scientific age, one in which all lines of useful effort are rapidly becoming reduced to a scientific basis. Salesmanship is a science because the facts of successful salesmanship have been gathered together, classified, and arranged for easy study by young men who wish to make it their life's profession. We are living in an age of the survival of the fittest. It means

more to be fit today than it did ten years ago. It will mean more to be fit ten years from now than it does today.

We shall consider some principles that will point the way to sound preparation for the work of salesmanship so that you will be "fit" for the struggle for success in business.

I shall speak this afternoon of a few ways in which a school boy can prepare himself for high-grade salesmanship while he is still at school. I say "while he is still at school," because I meet hundreds of salesmen every week who bemoan the fact that their parents allowed them to leave school too soon. These men sell quite a lot of goods, but they feel every hour of each day that they could sell so much more goods if they were better educated.

Salesmen drawing large salaries tell me that they lose big sales through not being able to write a convincing letter or on account of making some slip in their speech. Many of these salesmen tell me that they have to do business with highly educated people and they feel handicapped because their own education has been neglected. They cannot talk to a well-educated man in his own language. Then, again, some of their customers have highly trained minds and strong reasoning powers. These men seem so far above the unequipped salesman that the latter's confidence in himself is not sufficient to enable him to close deals with men of superior mentality.

To be ready for some of these conditions, I have a few suggestions to make to you, boys, this afternoon. One is, endeavor to enjoy every hour you put on such subjects as arithmetic, algebra, and Euclid, because they train your reasoning powers. They also train your power to concentrate. Every good salesman must be able to concentrate or hold his mind down to one thing for a long time. I would say, also, endeavor to enjoy the study of literature and poetry because it trains your imagination, your memory, and your power to express yourself in convincing word-pictures.

I mentioned memory just now. Many sales are lost through lack of a good memory. You have an opportunity here and now to train your memory while at school. Better practice now than have to do it when you should be busy studying your goods and studying your customers.

One other thing I must mention, and that is, to study the laws of health, so that you will not poison your bodies with the food

you eat and by the way you eat it. A great many sales are lost by good men just because they are sick through being careless in their eating. Take breathing exercises first thing every morning. Bathe your chest in cold water every single morning. Keep the muscles in splendid trim by easy exercise during several parts of the day. All this will help you make good salesmen.

Now here is one thing I want to say about what you can get here in school, so that you will not be sorry for having neglected it later on. Many salesmen close deals by being able to write good letters or good advertisements. Other salesmen lose fine sales by being ignorant of how best to state their points on paper. To avoid this condition of affairs later on, boys, make the most of the composition period, polish up your language in order to make it more forceful. To this end, study the rules of rhetoric so that you can make your language more convincing and clear. Do it now, boys, while you have the chance, and in later years you will have more time to study your goods and to study your customers. If you do what I have just advised, you will be well equipped to tackle the selling game.

Now I am going to speak of a part of salesmanship that you should pay a great deal of attention to. It is this: Sizing up customers, and then rubbing customers the right way, as it were—being tactful. To do this you should cultivate a pleasing personality. Be in earnest in everything you do. Cultivate gracefulness of walk, and when standing. Read books about great men who have these qualities. Fill your mind with such stories. Broad study will make you open-minded, which is a necessary quality of a good salesman. A narrow-minded salesman is so because he is ignorant, and you want to do everything you can now to equip yourself with knowledge, so that people will never accuse you of being narrow-minded. Such qualities as refinement, regularity, and thoroughness will enable you to get on well with different types of customers. These qualities you have the chance of developing now while mastering your studies in school. Do everything to persuade your parents to keep you in school for a number of years, in order that you may be highly equipped for rendering high-class service to your firm and its customers.

Closing a sale means the ability to get another mind to look at

the thing in your way. He must be persuaded. You can do this by a careful selection of words and sentences when at the critical point of the sale. So study this matter of language-mastery. It will help in every single move of a business deal.

Now, boys, this means a lot of effort, I know. Many men sell goods without the equipment I have spoken about, but they could sell a great deal more if they had more of such equipment. I know of one furniture salesman in the city who often sets his customers laughing at him by saying "Them's fine chairs." "That's some sofa." Many women do not like his way of talking. They have no respect for him. They lose confidence in his judgment. They do not take his advice about things, because they feel that if he is not careful in his words he will not be careful in his dealings with them. Remember, boys, women are the most numerous buyers in the world.

Some salesmen get $50.00 a month. Some earn $150.00 a month. Why? The first one sells goods, but needs a lot of correcting—supervision or oversight. The second one sells much goods and needs less correcting and overseeing. No one else is paid part of his salary to do his thinking for him. The thought may be represented with some degree of accuracy by these lines:

Much supervision needed	Little efficiency
Less supervision needed	More efficiency
Little supervision needed	Greater efficiency
No supervision needed	Highest possible efficiency

These two things—needed supervision and efficiency—vary. That is, each grows less or greater as the other grows greater or less. If, then, you wish to measure the grade of your work as to quantity and quality, study carefully to find out how much supervision is really needed. And mark well: the test—the real test—is not how much it *gets*, but how much it *needs*.

UNIVERSAL APPLICATION OF THE LAW

The law applies to everyone from the ruler of the nation down to the humblest employee. Even the ancient king in an absolute monarchy was sometimes greatly in need of supervision, although by virture of his position there was no one to administer it directly. When that need became too great, he was sometimes removed or

even beheaded through the exercise of indirect supervisory power by his subjects.

Your opportunity for fitting yourselves for high-grade salesmanship is right here at school. Avoid envying those who are at work in business places. They have not the chance you now have. You will be able to apply all you learn here out in the whirlpool of business competition. The best equipped man wins out.

I repeat that your opportunity for obtaining the equipment is here and now.

THE BUILDING TRADES

W. H. CARTER
President of the Carter-Hall-Allinger Co.

I represent the building business, one of the largest industries in our country, in which I am sure there are more opportunities for you, boys, than any other business. A boy that makes good in the building business finds so many different avenues open to him. A successful building superintendent can go out as superintendent or foreman on railroad construction, concrete work of all kinds, such as dams, bridge piers, etc., road building, street paving, water works, and sewer construction. Numerous jobs with big pay await the man who knows the business.

To learn the building business there are several ways, but I would advise you to finish your high-school education, then, at about 16 or 17, apprentice yourself to some contracting firm as a carpenter or bricklayer, if you feel you cannot afford a college education such as structural or civil engineering. Of course you can afford this if you try, as many of our best engineers have worked their way through college and come out quicker and with higher honors than the boy whose dad furnished the money.

While there are all the different trades connected with the building business, I suggest the bricklaying or carpenter trades, as you come in contact with all branches of the work from the foundation up, and have an opportunity of becoming familiar with all classes of construction work under more different foremen or more difficult buildings, and have a chance to talk to different mechanics, from all of which you gain your entire knowledge of the building trade.

I can say to you that all I know of the building business I have learned from close observance of the different methods employed by other contractors and from conversation with different mechanics.

However, although this is your principal source of knowledge, there are many ways for you to get help as you go along. When you start your apprenticeship, get hold of different books to read on different kinds of construction. We have a library in our office from which we loan our boys books on the trade they are learning. Take a course of architectural drawing at the Y.M.C.A. or night school, or by correspondence. This will help you to understand plans and specifications prepared by architects, and when you understand and know them and can lay out work, the one hard thing to learn is to work your men to the best advantage.

This knowledge can only be obtained by applying good horse sense and watching the other fellow when you are working under him, and ever waiting for a chance to show what you can do; and when you get that chance don't let anything prevent you from making good. If you have to disappoint social friends, miss a ball game or taking your girl to a show, go in and make good—run the work as if it were your own. When that job is done another will be waiting for you, and your career as a building superintendent is well under way. It all means hard study and hard work and large responsibilities. When you are placed in charge of work, your men's lives are protected by your judgment as to the placing and erecting of scaffolding and equipment. Your firm's reputation is up to you and their money, perhaps. One bit of poor work or of misplaced judgment in some respect might lose them much money.

Now, in serving your apprenticeship and learning a trade, you do not have to do as perhaps your father did in the Old Country—pay for a chance to learn a trade. To learn to be a bricklayer or mason, you apprentice yourself to some firm of contractors for four years. The first year you are paid $6.00 per week; the second, $12.00; the third, $18.00, and the fourth, $24.00. After the four years and your apprenticeship are completed, you make 75 cents per hour for eight hours as a journeyman, or you should be able to run a job at a salary of $40.00 to $50.00 per week. A carpenter is much the same, only the wages are not as much.

Carpenters make $5.00 a day, but they get in more days' work in a year than a bricklayer, which makes their year's pay about the same.

Now, boys, the reason I have told you all this is to show you that while you are learning a trade which will bring you a good salary always, a trade for which you will always be in demand somewhere, you are at the same time making the first year as much per week as the boy who runs messages, runs an elevator, or drives a delivery wagon—a work in which there is no possible future, except from $6.00 to $12.00 or $15.00 a week as long as you live. See the difference? One leads to a job of $50.00 a week, one to a job of $15.00; one to a position in which you do things, erect buildings to which you can point in your old days with pride, the other to just a job of long hours and small pay.

The building business or any construction work is very fascinating; you see each day something done, something new accomplished; you meet all kinds of people, travel in different lands, work out of doors, which makes you strong and healthy, and each job completed, if done well, will stand for years as a monument to your handiwork.

As I said before, the highest positions in any firm of builders are open to each of you, boys, if you are square and honest and willing to work hard and apply your whole energy to the job you are on and to your employer's interest.

You do not require a college education to become a building superintendent, although no boy should miss the opportunity of getting a college education if it is within his reach.

The pay of a building superintendent depends entirely on his ability to do work quicker and cheaper with the same number of men than the other fellow. We have superintendents in our employ making from $30.00 to $60.00 per week. The $60.00-a-week man is a fellow who has applied himself closely to his business, knows all the quick ways of doing things, is capable of handling men to good advantage, looks after his work day and night if required, and goes out with one aim in view—to erect the building he is sent out on quicker and cheaper than any other man can. That is what you want to be, and you have perhaps a better opportunity to succeed than some of the men with us.

We have about thirty superintendents and foremen and several under-foremen in our employ, and about 1,500 workmen during the busy season. Most all of our superintendents or foremen have been promoted from the ranks. If we want a brick foreman, I go to the superintendent on some job and ask if he has a bricklayer on the job who would make a good foreman. If he has a man who seems interested in his work and wants to get ahead, we give him a trial. If he makes good, he possibly goes on up to general superintendent. The same with a carpenter foreman or any other trade. We have a good superintendent who started as water-boy, went up as labor foreman, who is now making $40.00 to $50.00 per week. Some started as timekeepers. That is a good way, as you can get a good knowledge of the business or bookkeeping side as well as the practical side.

That is the way I started in the building business. About sixteen years ago I was keeping time and checking material under construction at $5.00 per week. I soon became assistant to the general superintendent and in a short while was placed in charge of some small work. I worked hard, made good, and they gave me a larger job, and so on, always on the job and working for the interest of the firm I was with, until I went into the company I am a part of today.

Now, boys, I could tell you a lot about the building game that would interest you if I were more used to talking to you or acting in this position, as it is an interesting business. I could tell you of men I know in some of the larger cities who are recognized as the best men in the business, men who carry out large undertakings, build twenty- and forty-story buildings, and things like that—men who are making a success of the business financially, and not one of these men had any special training or any special opportunities that are not open to you in Winnipeg today.

Boys, every opportunity to become great in any business or profession is offered you in Winnipeg today; it is up to you to make good, and I hope that some of you boys here this afternoon will be strong factors in the building business in the years to come, and any time I can be of any service to you in the way of advice or information I trust you will come to see me. Come to my office or my home any time.

PATTERN-MAKING

E. STEWART
Mechanical Superintendent Manitoba Bridge and Iron Works, Ltd., Winnipeg

We are now living in the age of extreme specialization of trades and industries, consequently the older and more typical handicrafts are rapidly being broken up.

Fifty or sixty years ago, the old race of millwrights were "all-round" men in the engineering firms. They could fit up a mill throughout, design its arrangements, make the patterns, weld a shaft, forge levers, fit up the bearings, turn and bore the wheels, line the shafting, and, in fact do all the work that is now divided among half a dozen separate and distinct trades. Necessarily they were not so skilful in any one branch as the individual tradesman of today, but they were better craftsmen, because more complete than the mechanics who now do one thing and one thing only. This race of craftsmen, except in some isolated localities, has nearly died out.

Now the pattern-maker constructs the wooden models; the fitter chips, files, and fastens the different parts together; the planer, slotter, and shaper save the fitter's muscles; and the iron-turner prepares the shafts and bores the wheels. The fitter and erector occupy distinct positions, while each individual workman usually excels only in some special branch of work.

But this division of labor has its advantages. Machinery has been cheapened; there is more beauty and finish about it; and it is capable of being turned out much more rapidly than was possible under the old style.

Let us now consider for a few moments the subject of this paper, "The Art and Trade of Pattern-Making." I need not waste valuable time describing to you the various tools required by a pattern-maker, nor yet the various uses they are put to, as I am well aware you receive valuable instruction along that line at the manual classes in connection with the schools. There is only one tool which I cannot overlook, as it is most necessary in pattern-making, viz., the contraction rule. Now the contraction rule, as the name implies, is a rule which is made longer than the standard rule by the amount which metals contract in cooling from the molten state

to the ordinary temperature of the atmosphere. Though a standard rule is required for the measurement of castings, it would be obviously inconvenient to use it in pattern-making, because the workman would be perpetually making approximate allowance for contraction in fractional parts of a foot. So the contraction rule economizes his time and insures something more accurate than approximations.

A two-foot contraction rule for cast iron is $\frac{1}{4}$ inch longer than the standard rule, $\frac{1}{8}$ inch in two feet for steel, $\frac{1}{8}$ inch in ten inches for brass, and so on. Of course this contraction varies in accordance with style and weight of article being made, and the proper allowance can only be learned by careful study and years of practice.

Next we come to the timber used for patterns. Yellow pine is the most extensively used timber for large patterns. It is light, soft, easy to work, comparatively free from liability to warp and twist, and it is cheap. Of course it must be perfectly dry, as wet lumber is useless for patterns, because the pattern would warp and shrink out of shape when drying. For small patterns mahogany is the best timber. It is hard, strong, and not liable to warp. Its price, however, precludes its use except for small patterns or standard patterns which have to be molded repeatedly. Other woods are sometimes used, but these are the best and are the ones most commonly used.

To fully explain the various methods of constructing patterns would incur much labor and occupy many volumes, so I will content myself at present by explaining to you what a pattern really is. A pattern is a duplicate of the article required, but made larger than the casting by the amount of contraction which that metal will have when cooling. It must also have allowance made for machining where required, and be so constructed that it can be withdrawn from the sand. It must also be so constructed as to make the pattern as strong as possible and least likely to warp. I have here a pattern of a sheave wheel. You will notice that it is split through the center of the groove; this is necessary in order to withdraw the pattern from the sand. The pattern is first placed on a straight board, bottom side upward, and a suitable box placed around it. This box is then filled up with sand and rammed up. The whole is then rolled over and the sand dug out to the bottom

edge of the groove, and a tapering ring put in position. This ring is then rammed with sand and a parting made to the upper edge of the groove. Next, the top half of the box is placed in position and rammed with sand, provision having been made for the running metal. The top box is then lifted off, one-half of the pattern withdrawn, next the ring is withdrawn and then the other half of the pattern. The ring is then replaced and the top half of the box put on, clamps are then put in position to hold the top and bottom boxes together and the mold is ready for receiving the metal. The drawing on the board will fully explain what I mean. This is an example of a sheave with a solid web, but sheaves of a larger size are very often made with arms, the construction of which the models before you will explain. Time will not permit of my explaining the construction of any other style of pattern at present, but I have with me several examples which I shall be only too pleased to explain to any of the boys interested at the end of the lecture.

We will now dwell for a little time on the "Qualifications of a Pattern-Maker."

Now I am not going to frighten any of you boys who have the ambition of becoming a first-class craftsman, whether it be pattern-making, molding, engineering, or a trade of any description, or a profession of any kind, by laying down to you a long list of studies. Book knowledge is indeed not really necessary, for many a first-class workman has been comparatively illiterate; but then such a man is generally incapable of ever becoming anything more than a mere man at the bench. Now I am sure very few of the boys before me wish to drudge along day by day, year by year, content with a mere journeyman's wages. Now is the time to start and expand the mental horizon. Spend your spare moments in enjoying the pleasures of literature and in gaining an insight into the marvels of the Wonderland of Science, instead of idling away the most valuable time of your life on the streets or in the pool rooms. Everyone cannot reach the top of the ladder; everyone will be appreciated who has learned the fundamental reasons of things and so can proceed intelligently at his task. Even when working at the bench no man knows when he may be thrown upon his own resources. There

is many a shop where there is no foreman kept to instruct you, so the man who can cope with emergencies as they arise and can do his job quickly and substantially without assistance generally finds employment as long as he cares to keep it.

There is no use to think of becoming a good pattern-maker without becoming also, to some extent, a good engineer. If you are ill-informed in the principles of design you will hesitate how to proceed with a new piece of work, or whether to proceed with it at all without consulting the foreman or superintendent. It is therefore necessary to have a knowledge of the elements of geometry or mensuration; with that knowledge you can mark out and cut away your stuff at once without working slowly and doubtfully in the dark.

A knowledge of drawing is one of the chief requirements of the pattern-maker. By drawing I mean the principle of projection as applied to geometric figures in plane, elevations, sections at various angles, and so forth. The mere copying of mechanical drawings is of little or no value, but the student that has thoroughly mastered the principles of projection will never experience any serious difficulty either in making or in understanding an intricate drawing. You should also be proficient in arithmetic; by that I mean the elementary rules, together with proportion, decimals, and the evolution of the square and cube roots.

Lastly, there is that experience which in the course of time bears the semblance of intuition—that experience which comes of close and long-continued observation and which is invaluable to its possessor. So, boys, I would advise you to be always on the lookout for something new. Study well everything you see; you will learn much more in this way than by many book studies.

Pattern-making is a trade which I would recommend to any boy who is energetic. You will always find it most interesting, for it is one of the very few trades where such a variety of work can be got. To any who wish to become pattern-makers or tradesmen of any kind, I can only say, be industrious, study hard while at school, stay at school as long as possible. Nothing will be gained by leaving school too early, as what you are learning now will be forgotten before you start work if you run around the streets for a few years.

[*To be continued*]

FACTS ABOUT THE WORKING CHILDREN OF CINCINNATI, AND THEIR BEARING UPON EDUCATIONAL PROBLEMS—*Concluded*

HELEN T. WOOLLEY
Cincinnati, Ohio

WAGES

(Table VII; Chart VII)

The educational return to the children is, then, a small factor. How about the financial return? Table VII gives the wage statistics for a series of 2,067 children. At the time these statistics were tabulated, half of these children had held but one position, 32.3 per cent had held two, 11 per cent had held three, 2.6 per cent had held four, and 4 per cent had held five or more positions. No account is taken in this table of the length of time the positions had been held.

Almost 40 per cent of the children had taken the first position without even asking what they were to be paid. The wages stated in the table are those promised the children when their contracts were signed. In most cases the office has no assurance about wages except the word of the child, but a long experience has taught us that their statements are surprisingly accurate.

There is a decided sex discrimination from the start. More than eight-tenths of the girls receive less than four dollars a week, while only one-half of the boys are paid less than four dollars. Three dollars is a medium weekly wage for the girls, although more than half of them receive less than that in their first positions. The medium weekly wage for boys is three dollars and seventy-five cents. These sums do not represent average weekly earnings for the year, but merely wages paid at the start in each position. For a limited series of children—474 at the present time—we have a complete industrial history for one year, stating all the rates of pay received, and the time employed. From these facts, an average weekly wage for the year has been figured out for each of

TABLE VII

Wages of Children under Sixteen in Cincinnati

	Position I				Position II				Position III				Position IV				Position V			
	Boys		Girls		Boys		Girls		Boys		Girls		Boys		Girls		Boys		Girls	
	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Less than $3.00..	85	12	317	55	27	7	150	40	1	0.5	46	36	1	1.5	16.	35	1	2	11	31.0
$3.00–$3.99.....	347	51	198	34	206	49	174	46	72	47.5	63	49	31	46.5	20	45	13	30	17	49.0
$4.00–$4.99.....	193	28	49	8	133	32	42	11	60	40.0	17	13	27	40.0	9	18	18	42	4	11.5
$5.00 and over ..	62	9	15	3	50	12	13	3	19	12.0	3	2	8	12.0	1	2	11	26	3	8.5
Total.....	687	100	579	100	416	100	379	100	152	100	129	100	67	100	46	100	43	100	35	100.
Had not asked...	340	.....	461	.....	106	.....	130	.....	35	.....	50	.....	7	.....	19	.....	3	.....	4	.....
Total.....	1,027	.....	1,040	.....	522	.....	509	.....	187	.....	179	.....	74	.....	65	.....	46	.....	39	.....

these children. It is an interesting fact that the medium wage on this basis is also three dollars for girls, and three dollars and seventy-five cents for boys. Apparently the increases in pay balance the time unemployed, and leave the average yearly earning about equal to the initial wage.

Another interesting fact revealed by the table of wage statistics is that the rate of pay increases with mere change of position (Chart VII). The proportion of children in the lower rates of pay decreases with successive changes, and the proportion of those in the higher rates increases. The children have, then, some justification for changing positions. They better themselves financially by doing so. It may still be true that the occupations which hold out the best permanent future are most poorly paid in the early years. The children may be short-sighted in their policy, but one judges their apparent instability less harshly when he knows the immediate profit which it brings them.

ECONOMIC NECESSITY AS A FACTOR IN CHILD LABOR

We have seen that the educational value of the work open to children under sixteen is very small. A child does not profit much intellectually, or in manual skill in general, by running errands, basting sleeve seams, or lacing shoes for two years. Small as the wages are, the first supposition is that these children must be going to work because of economic necessity. Before adopting any definite educational policy in the matter, it is essential to know how large a proportion of the families really need the earnings of the children under sixteen. In our own office, we have made the best estimate we could of the economic necessity in a series of over six hundred families. A visit had been made to the home in only half of the cases. Our estimates were based on all the facts we preserved about the family—such as the number of wage earners, their occupations, their earnings, if known, the number of children under fourteen, the rent paid, the number of rooms occupied by the family, the amount of spending money given the child, and the child's own statement of a preference for work or school. The estimates were made separately by more than one person, and the judgments compared. Very doubtful cases were omitted. The

point we tried to decide in each case was whether the family, without the child's earnings, would need outside assistance. The final estimate was that 73 per cent of the families did not need the child's earnings, while 27 per cent did. This estimate, of necessity, is very nearly the same as that made in the government investigation (29.3 per cent),[1] but is a little more than that of Massachusetts towns (24 per cent),[2] or of New York (20 per cent).[3] The only estimate very much higher than this is the one made by Mr. Talbert[4] in the Stockyards district of Chicago (53 per cent), where the conditions are exceedingly bad. Economic necessity is not, then, a compelling force of child labor in the majority of cases.

The real force which is sending the majority of these children out into the industrial field is their own desire to go to work, and behind this desire to go to work is frequently the dissatisfaction with school. The children who tell us that they would have preferred to stay in school are a minority. Most of them are quite frank in saying that they are tired of school and anxious to leave it. The dissatisfaction with school is doubtless in part the restlessness and desire for change, adventure, and independence characteristic of the age of puberty, but perhaps an even more potent factor is the large amount of retardation among working children. Two-thirds of the children leaving our public schools are the failures—and, like the rest of humanity, they are tired of the things in which they fail.

APPLICATION TO EDUCATIONAL PROBLEMS

Here are the facts—a large army of children leaving our public schools before they have completed even a grammar-school educa-

[1] *Woman and Child Wage Earners in the United States*, Vol. VII, "Conditions under Which Children Leave School to Go to Work," Washington, 1910; Senate Document No. 645, p. 57.

[2] *Report of the Commission on Industrial and Technical Education* (Massachusetts), Columbia University, Teachers College; *Educational Reprints*, No. I, New York, 1906, p. 92.

[3] Barrows, Alice P., "Report of the Vocational Guidance Survey," *Bulletin No. 9, Public Education Association*, New York, 1912.

[4] Talbert, Ernest L., *Opportunities in School and Industry for Children of the Stockyards District* (University of Chicago Press, 1912, p. 39).

tion—leaving, not because they must, but because they wish to—entering occupations which do not aid in their development—receiving wages so small that they would not furnish the barest necessities of life. Shall we allow it to go on?

Suppose we agree, for a moment, that the state of affairs ought

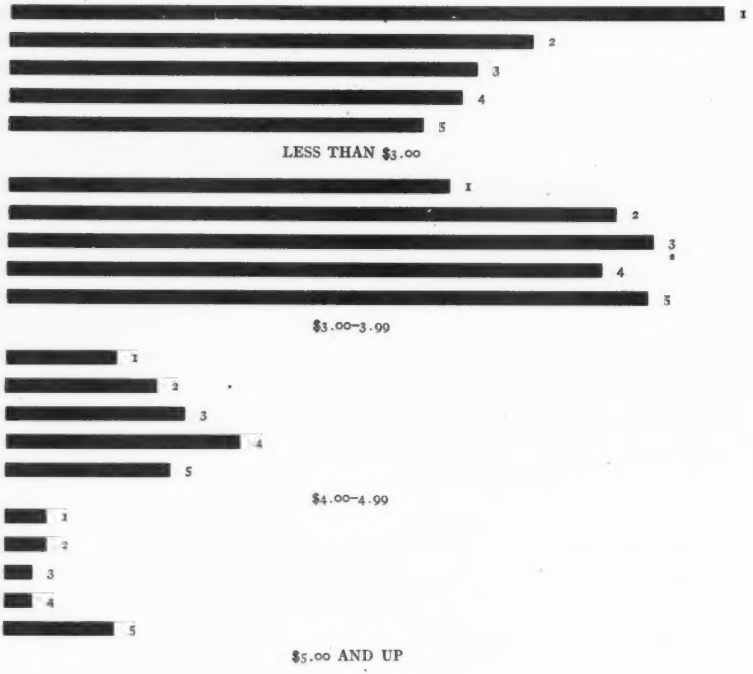

CHART VII—WAGES

not to continue, and consider what ought to be done about it. It is hopeless at present to expect industry to modify the conditions of employment sufficiently to insure educational work to children. The problem must be attacked by the schools, if at all. Until recently, the public schools have felt that their responsibility ended when the children who were not capable of succeeding were simply

dropped from the rolls, but they are beginning to feel that turning out every year an army of children who have merely failed, and have not been helped to find out in what direction, if at all, they might succeed, cannot be regarded as satisfactory educational work. The most obvious suggestion for a remedy is to raise the age require-

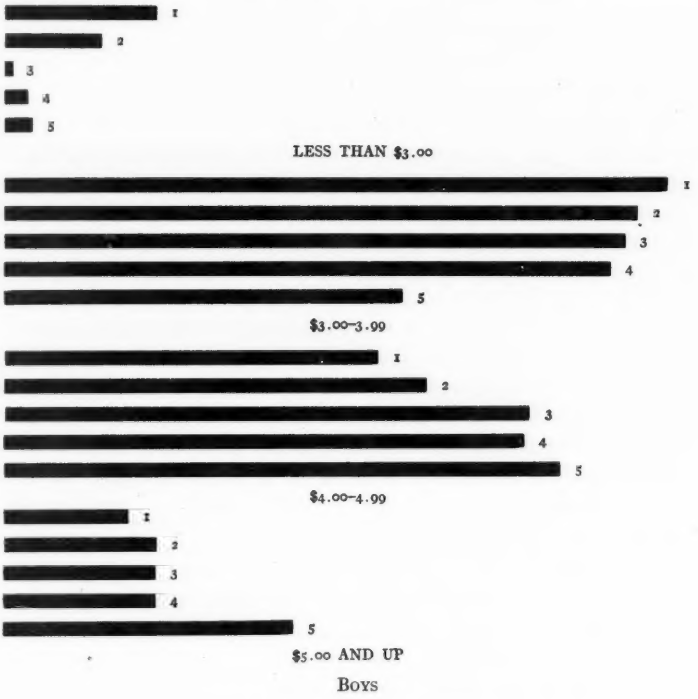

CHART VII—WAGES—*Continued*

ment to sixteen years, when the openings for children in industry are more advantageous. But to force children, who have already failed, to endure two more years of a kind of training for which they have shown themselves unfitted, seems barbaric.

The problem cannot be really met by the schools until they provide a different type of training—a type of training which would

make possible an appeal to the children's desire to work with their hands, and to their longing for economic independence. Those who feel most intensely the necessity for such a modification of the school curriculum are tempted to urge an immediate increase of the age requirement to sixteen years, because it would bring the schools at once face to face with the imperative necessity for providing a more nearly adequate kind of education for those who are failing in the present academic régime.

But the recognition of the need of the children for more vocational education is only the first step in the complex problem before us. For what occupations in particular shall the schools undertake to prepare children? It is safe to say that not one of the trades or occupations on our list, as it is at present conducted, offers enough in educational and financial return to the children to warrant the public school in training them for it. It ought to be laid down as a basic principle in devising any system of industrial education, that the state will never take over the preparation of workers for a specific trade until that trade can show that it offers its employees a chance for *physical* and *mental* development, and a fair financial return for their labor.

It seems the part of wisdom, then, for the public schools to go very slowly in the matter of establishing courses of training designed to prepare young children—even as young as sixteen—for specific industries. As industry itself becomes more socialized, and the welfare of the individual worker becomes a matter of much greater concern to it than at present, it may be safe for the schools to take over the preparation of workers for a larger number of industries. Indeed the schools may have a very powerful influence in hastening the development of this more social spirit in industry, provided they make the training of workers for any craft depend directly upon the conditions of employment, and the educational and financial returns of the craft itself.

But even though specific trade training for the younger group of working children seems inadvisable at present, it does not follow that there is nothing the schools can do at once to assist them. We have seen that most of the children who are leaving the schools are those who do not succeed with work in which the stress falls—

as it does in our present system of instruction—on the purely intellectual method of presentation. If they are to succeed at all, it must be in some calling where work with the hands is of paramount importance. If the schools could lay more stress from the start on training manual dexterity of various kinds, and through many media, children of the class who leave the schools early—and perhaps the others also—would be the gainers in many ways. Not only would the mere possession of greater manual dexterity be an asset in industrial work and indeed in most pursuits in life, but the process of trying various kinds of occupations would be the most effectual way of helping a child decide for what type of work he is best fitted. Then, too, many children who are now failing in the schools, fail not so much because they lack mental ability, as because the kind of instruction offered does not succeed in stimulating their intellectual processes. Experiment has shown that many of these same children can be held in school, and that they can do the theoretical part of the school work, when their interest is maintained by making some sort of constructive work with the hands, a central feature in instruction.

In addition to general training in manual dexterity and the use of tools, the children who are to enter industry early would be much better equipped if they received elementary instruction in industrial history, social and industrial legislation, and simple business methods. There seems no good reason why a child should leave the public schools without knowing what the provisions of the child labor law are, or with so little idea of business method that he takes his first position—as 40 per cent of our children do—without even asking what he is to be paid.

One is often asked what is the use of providing better training of any sort for children who enter industry early, so long as the jobs remain the same. Perhaps there would be little use in it, if the jobs were sure to remain the same, but it seems a reasonable hope that more skilful and more intelligent workers may improve, faster than any other agency, conditions of industry.

BOOK REVIEWS

New Ideals in Rural Schools. By GEORGE HERBERT BETTS. Boston: Houghton Mifflin Co., "Riverside Educational Monograph Series," 1913. Pp. x+128. $0.60 net.

In this volume, Professor Betts discusses three of the major problems of rural education: the social organization and relationships of the rural school, the curriculum, and the quality of the teaching. Under the first of these topics, after showing the nature, opportunities, and characteristics of the rural population, he discusses the need of a community social center and the possibility of using the rural school for this purpose. The advantages of consolidation on both the social and instructional sides are presented, and the financial problems discussed.

He shows the meager, antiquated character of the rural-school curriculum and the crying need of modernization and adaptation to rural conditions. He presents recommendations as to the content of each of the elementary and secondary subjects, so as to fit them for their purposes in rural education.

In the last chapter, he portrays the inefficient character of the teaching in the rural schools, the inadequacy of the training, the salaries, and the supervision. He presents recommendations as to modes of remedying the deficiencies.

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UNIVERSITY OF CHICAGO

The Education of Tomorrow: The Adaptation of School Curricula to Economic Democracy. By ARLAND D. WEEKS, with an introduction by M. V. O'SHEA. New York: Sturgis & Walton, 1913. Pp. xii+232. $1.25 net.

It can safely be asserted that in the present transitional stage of education, there is no single body of rational opinion, lay or professional, that is generally convincing and accepted as to what should be the content of the curriculum of public education. Partial interpretations and conflicting opinions make up the literature of the topic. Popular and professional dissatisfaction with the work of the schools is the note now universally heard. These voices of discontent usually spend themselves in pointing out defects; constructive suggestions of fundamental import are rare.

The present volume, while still but a partial and hastily organized interpretation of the needs, is wholly constructive. Taking the social, particularly the economic, point of view, the author discusses the kinds of knowledge that men need for efficient living under the three headings, Productional Knowledge, Distributional Knowledge, and Consumptional Knowledge. The first refers chiefly to vocational education on the productive side; in his suggested curriculum he includes practical mathematics, elements of manufacturing, mechanical drawing, manual training, agriculture, productional phases of the various sciences, conservation of wealth, and the practice of trades.

By distributional knowledge, he refers apparently for the most part to commerce and government, as shown by the series of suggested topics: current political events, economic history, distribution of wealth, war, peace, slavery, feudalism, elective franchise, taxation, political parties, socialism, money, graft, corporations, charity, and as many others of the same nature. Consumptional knowledge is to show men how most profitably to spend their wealth and their time, and to give the necessary tastes and habits for doing so. Consumptional knowledge, following his list, includes literature, history, music, other fine arts, ethics, foreign languages, non-productional aspects of sciences, sports and games, travel, and a dozen others. The book urges a closer relation between education and the life-interests and life-work of a community.

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What Children Study and Why. By CHARLES B. GILBERT. Boston: Silver, Burdett & Co., 1913. Pp. vi+332.

This is a discussion of the curriculum of the elementary school. It deals chiefly with the program of work, not with the methods and processes. After a short introductory chapter discussing the problems involved in drawing up an effective printed course of study as a teacher's manual, the book is given up almost entirely to discussions of the various values of each of the subjects taught in the elementary school. It is clear from the general tone and spirit of the text that the book represents the crystallized results of long practical contact with the subjects as they are taught in our schoolrooms, rather than the theoretical contacts of the pedagogical student in his study, armed with his psychological and pedagogical "authorities." It is the kind of discussion of the curriculum that one would expect from the practical superintendent of long and successful experience.

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UNIVERSITY OF CHICAGO

Human Behavior: A First Book in Psychology for Teachers. By STEPHEN SHELDON COLVIN and WILLIAM CHANDLER BAGLEY. New York: Macmillan, 1913. Pp. xvi+336. $1.00 net.

This is, in the main, a brief untechnical book of general psychology, with the special cast indicated by the subtitle. The authors accept the functional point of view, and formulate all psychological principles in terms of human behavior. Greatest attention is given to those general topics that lie nearest to the teacher's practical labors; illustrations are drawn from classroom procedure; and application is made to teaching problems. The book is clearly intended for immature students: materials are organized upon the "spiral" plan; it is written in easy English, employing a simplified terminology; to each chapter is appended a glossary of all psychological terms used, and also a rather full list of "Questions and Exercises." The authors have emphasized more than is usual in textbooks for teachers the matters of instinct, habit, feeling and emotion, memory, and economical methods of learning.

J. F. BOBBITT

UNIVERSITY OF CHICAGO

Industrial Education. By JAMES E. RUSSELL and FREDERICK G. BONSER. New York: Teachers College, Columbia University, 1912. Pp. 50. Paper. $0.30.

This bulletin is a reprint of an article published by Dean Russell in the *Educational Review*, December, 1909; and of another by Professor Bonser which appeared as *Technical Education Bulletin, No. 10.* Both articles consider mainly the selection and organization of industrial materials in the vocationally undifferentiated elementary schools. Both suggest the consolidation of manual training, drawing and design, household science, and household arts into a single subject to be called industrial arts. In connection with such studies made as real and practical as possible, they would develop the related mathematics, science, history, and geography. They point out clearly the necessity of the school's concerning itself quite as much with the general *character* of the workingman as with technical information and skill. The articles are well worth the republication.

J. F. BOBBITT

UNIVERSITY OF CHICAGO

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN
Librarian, School of Education, University of Chicago

Abbott, Helen L. The responsibility of the schoolroom. Educa. 34:27–30. (S. '13.)

Asterisk, John. The reorganization of the University of London. Educa. R. 46:109–34. (S. '13.)

Bell, Catherine F. Another experience with the Binet test. Train. School M. (N.J.) 10:77–78. (S. '13.)

Bennett, Charles A. Impression gained from a day's visit to the Mississippi Industrial Institute and College. Voca. Educa. 3:11–23. (S. '13.)

Bok, Edward. Is the college making good? Outl. 104:851–57. (16 Ag. '13.)

Brown, Marion Frances. The creed of an American schoolboy. Educa. 34:45. (S. '13.)

Cholmeley, R. F. Secondary education: the next step towards a national system. Educa. T. 66:375–78. (S. '13.)

Church, H. O. The use of scientific material in the high-school course in English. School R. 21:461–66. (S. '13.)

Claus, Henry T. The problem of college chapel. Educa. R. 46:177–87. (S. '13.)

Colby, Elbridge. Value of the college fraternity. Educa. R. 46:157–67. (S. '13.)

Cooley, Edwin G. Professor Dewey's criticism of the Chicago Commercial Club and its Vocational Education Bill. Voca. Educa. 3:24–29. (S. '13.)

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Education that educates. Outl. 104:845–46. (16 Ag. '13.)

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Grupe, Mary A. A review of the pedagogical studies in the teaching of spelling. Educa. 34:1–19. (S. '13.)

Hargitt, Charles W. A problem in educational eugenics. Pop. Sci. Mo. 83:355–67. (O. '13.)

[1] *Abbreviations.*—Educa., Education; Educa. R., Educational Review; Educa. T., Educational Times; J. of Educa. Psychol., Journal of Educational Psychology; Lit. D., Literary Digest; Outl., Outlook; Pop. Sci. Mo., Popular Science Monthly; School R., School Review; Train. School M. (N.J.), Training School Magazine (New Jersey); Voca. Educa., Vocational Education.

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Irwin, Elizabeth A. A study of the feeble-minded in a west side school in New York City. Train. School M. (N.J.) 10:65–76. (S. '13.)
Is the college making good? Outl. 104:991–95. (30 Ag. '13.)
Jessup, Walter A. The shifting school population. School R. 21:513–22. (O. '13.)
Judson, Harry Pratt. Economy in education. School R. 21:441–45. (S. '13.)
Kenwood, Sydney H. The real problem in education. Educa. T. 66:379–80. (S. '13.)
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Manny, Frank A. Bibliography of sex hygiene. Educa. R. 46:168–76. (S. '13.)
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Potter, George M. Relative efficiency of public and private secondary institutions. School R. 21:523–37. (O. '13.)
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Sachs, Felix. Preliminary study of the relative efficiency of inductive and deductive teaching of logical reasoning. J. of Educa. Psychol. 4:381–92. (S. '13.)
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Short, R. L. The institutional high school and what it does for the community. School R. 21:475–77. (S. '13.)
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